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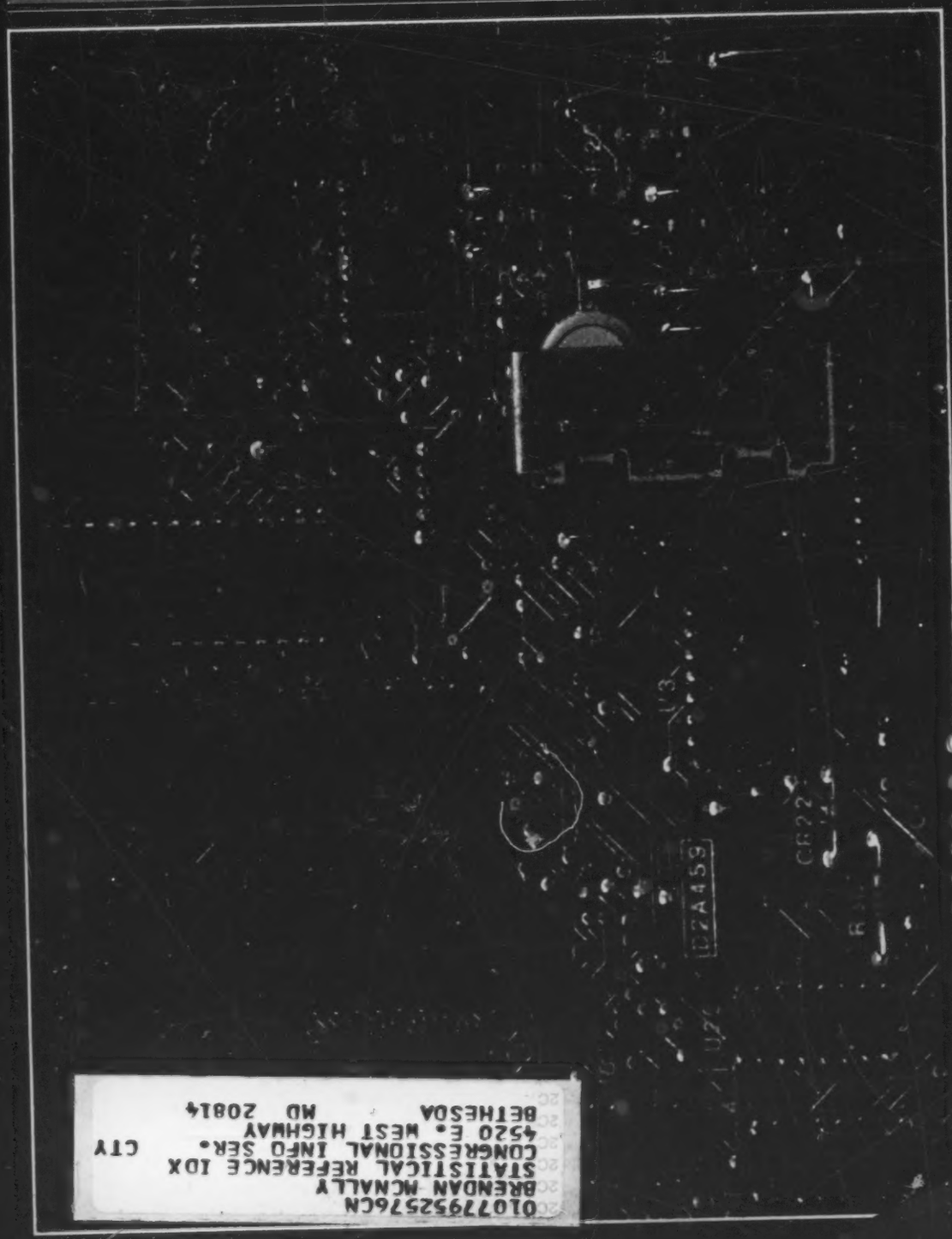
AUTOMOTIVE MARKETING

The Marketing/Business Magazine For The Retail Aftermarket

SEPTEMBER 1988



Our Crystal Ball Says Electronics & Component Computerization Will Be Paramount. How Will It Affect The Retail Aftermarket?

Fall/Winter Selling:
A Thumbs Up Season

Is There A Beetle In Our Future: Part Two
The Search For A DIY-Perfect Car Continues

Post-APAA Show News

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PUBLISHER'S NOTES

OUR THUMBS UP ISSUE

John Hill of the Crazy Joe's operation is very optimistic about Fall/Winner sales. He assured us that this will be a "thumbs up" season. Others on our Retail Panel agree. For more information, read Research Editor Philip Katcher's article about the sales season now upon us.

To boost the season's sales, we provide you with good ideas about capitalizing on sales opportunities in our Merchandise Ideabook, printed as a convenient pullout insert so you can share it with in-store personnel.

Looking a little further into our future, Senior News and Features Editor John Wirebach writes about the cars of the future. Key word? Computerization. Key phrase? Maintenance rather than repair.

We asked Contributing Editor David Evans to pretend he was a retail buyer at the recent APAA Show. He reports on some of his favorite products in our Detailing The Market section. You'll find other post-APAA Show news there, too, and in our Market Line analytical section.

We've worked hard, and well, to package all this information for you in our customary efficient and attractive *Automotive Marketing* format. We hope you think it's a thumbs up issue too, and that it's helpful to you and your business. Good selling, and let us hear from you. ■

Sarah Frankson, Publisher

DETAILING THE MARKET

IN-STORE FOCUS

PARTS CITY INC.
Headquarters: 1420 Seaboard Industrial Blvd., Atlanta, GA 30318
(404) 352-0146
Stores: 28
Total Chain Sales: $12,000,000
Average SKUs: 12,000
Founded: 1890 (Alexander Seewald); 1972 (Parts City)

Moye

One of the oldest, and more traditional, WD firms in the country owns the up-and-coming Parts City retail parts chain headquartered in Atlanta.

Until the early 1970s, Alexander Seewald, founded in 1890 as a retailer of bicycle parts and accessories, sold exclusively to jobbers. But in 1972, the firm took over its troubled customer, Tiger Auto Parts, and renamed the chain Parts City.

The reason for the venerable institution's venture into retailing, Andy Moye, Parts City president, said was the farsightedness of company president Jack Alexander II.

"He saw retailing as the wave of the future," Moye explained. "He wanted clean stores, lighted merchandise out front—and the opportunity presented itself because Tiger was going bankrupt." According to Moye, Alexander saw an opportunity to express his ideas about future parts sales operations, and also a way to save a valuable customer.

Moye came on board two and a half years ago, from a retail background at Richway and Federated Department Stores. He first attempted to "get hold of systems. The stores had had problems maintaining margins," he explained. "Our aim was to reduce shortage so we could keep the margins we were earning.

"The main thing to do is to focus not only on one thing like that, but to make everyone want to fix it. Everybody in the entire operation must know it's important, and work on every little thing which has an effect on it."

As one result of this policy, every Parts City store must balance the books monthly, reconciling every discrepancy. And, "they must check every shipment in full as it comes in," said Moye. "This is a very controversial practice, both within the company and in the industry, but again, we get everybody involved in the process, and understanding how important it is. If you say it's not important, or it's too insignificant to make a difference, people get the wrong message."

Moye has also repositioned the stores. "We've started promoting at much sharper pricing," he said. "We are more oriented toward consumer goods in our ads and in our merchandise mix." Parts City makes its own purchases of strictly retail accessory items, sometimes providing those to Alexander Seewald customers through the AS warehouse.

In addition to competing on price, Parts City is changing the look of its stores. The model store, which just opened on a heavily trafficked street in Savannah, GA, has 3,800 sq. ft. of sales area, features neon signs in the windows, universal parts symbols on the store's exterior, and a racetrack layout with new triangular wall fixtures. The store is the first in the chain built from the ground up.

The racetrack is turned on a 45° angle, and broken into easily identified departments. Lower gondolas give it a clean.

"That sales floor is not a warehouse," Moye said. "Warehouses belong in the back of stores or at headquarters, not where the customer can see them. If this means having open space, cutting down on the height of the gondolas, or being creative in fixturing, we'll do it. We want to add drama and bring the customers into an interesting looking store."

The entire merchandising scheme of this store, which will be duplicated in the chain's other stores, presents a dramatic effect. "Fashion stuff is what the customers don't know we have," said Moye.

Why Savannah for its prototype? Moye explained that Parts City was once the dominant retailer in this area, but AutoZone, Nationwise, and Western Auto are providing strong competition. "We're trying to recapture the town," Moye explained.

DETAIL

70%

more miles were driven by every member of the U.S. population in 1987 than were in 1970, according to the Federal Highway Administration and Current Population Reports.

PROFILE: FILTER DIYers

Drawing from the 1988 *Automotive Marketing Consumer Automotive Repair Study*, we look at DIYers who purchased and installed oil, gas, or air filters during the previous 12 months.

			Age					Income				Hours Per Month Spent On DIY			
Total	Male	Female	-25	25-34	35-44	45-54	55 +	-$20K	$20-30K	$30-40K	+ 40K	-1 Hrs	1-5 Hrs	6-10 Hrs	11 + Hrs
100.0%	84.2%	15.8	24.1%	27.3%	17.1%	14.7%	16.2%	23.9%	26.0%	16.8%	27.1%	12.4%	55.3%	18.1%	12.5

THE AUTOMOTIVE MARKETING INDEX

THE 1988 *AUTOMOTIVE MARKETING* MARKETBASKET

To determine the price movement, *Automotive Marketing* created a "marketbasket" of the best prices available for nine popular aftermarket products. We determine the best available price of each item in each marketing area each month to come up with an average marketbasket index.The products include a non-resistor spark plug; an oil filter; a can of 10W30 motor oil; a can of paste wax; an AM/FM/Cassette radio; a gas-charged shock absorber; a gallon of antifreeze/coolant; a pair of windshield wiper refills; and a 40-month-warranty battery. These products are usually on sale somewhere within each marketing area, which we define by their unique geographic, meteorological, and consumer characteristics.

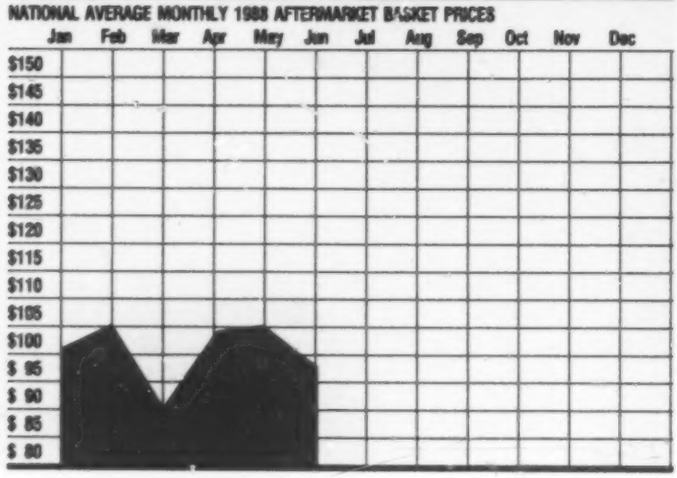
JUNE 1988 NATIONAL AVERAGE MARKETBASKET PRICES

A non-resistor spark plug:	$ .78	A gas-charged shock:	$ 14.75
An oil filter:	2.11	One gallon of antifreeze:	4.25
A can of 10W30 oil:	.72	One pair of wiper refills:	1.49
A can of paste wax:	2.51	A 40-month battery:	34.45
An AM/FM/Cassette:	38.75	Total:	$ 97.30

JUNE 1988 AM MARKETBASKET PRICES BY MARKETING AREA

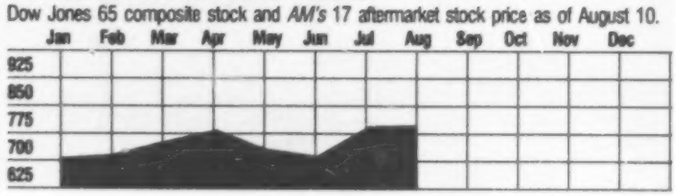
1. Greenbelt East:	$101.54	3. Smokestack East:	$ 86.26
2. Megapolis East:	105.47	4. Old South:	95.51
		5. Caribbean South:	97.30
		6. Smokestack Central:	90.29
		7. Grainbelt Central:	100.26
		8. Spanish West:	104.28
		9. Desert West:	103.53
		10. Greenbelt West:	116.35

NATIONAL AVERAGE MONTHLY 1988 AFTERMARKET BASKET PRICES



DOW JONES 65 COMPOSITE STOCKS

Dow Jones 65 composite stock and *AM's* 17 aftermarket stock price as of August 10.



AM 17 COMPOSITE AFTERMARKET STOCKS

1988 AFTERMARKET STOCK PRICES

Prices for the 52 week period prior to August 10.

	Exchange	52-week High	52-week Low	8/10 Quote	P-E Ratio
Action Auto	NASDAQ	8 ½	3 ¾	7	24
Allied Signal	NYSE	48 ¾	26	34	11
Armor All	NASDAQ	27 ¼	10 ¾	21 ⅜	20
Arvin	NYSE	37	14 ¾	21 ¾	26
Audiovox	AMX	14 ⅞	4 ¼	4 ⅜	7
AutoSpa	NASDAQ	4 9/16	⅞	1 ⅝	77
Big Bear	NASDAQ	27 ¾	14 ⅞	27 ½	13
Champion Parts	NASDAQ	12 ⅜	4	6 ⅜	29
Champ Spk Plg	NYSE	16 ⅜	7 ⅞	12	31
Chevron	NYSE	60 ¾	32	46 ¼	11
Chrysler	NYSE	48	19 ⅝	22 ½	5
Coachman	NYSE	13 ⅝	6 ⅝	11 ¼	36
Cooper	NYSE	74 ½	39	52 ¼	14
Dana Corp.	NYSE	54 ¼	27 ½	35 ¼	10
Durakon	NASDAQ	14 ¼	7 ½	14	15
Echlin	NYSE	19 ⅝	10 ¾	17	18
Equion	NASDAQ	8 ⅜	4	6	9
Ford	NYSE	56 ¼	30	50 ¼	5
GM	NYSE	94 ⅛	50	75 ¾	6
Genuine Parts	NYSE	44 ⅜	27 ¼	33 ¾	16
Gn Auto	AMX	6 ⅜	1 ⅜	1 ⅝	61
Goodyear	NYSE	76 ½	35	57 ½	6
Jiffy Lube	NASDAQ	18 ¼	6 ½	9 ½	22
JP Industries	NYSE	24 ⅞	12	16 ¼	11
K mart	NYSE	48 ⅜	21 ⅝	32 ⅝	10
Lancaster Colony	NASDAQ	26	15 ¼	18 ¼	12
Masco	NYSE	39 ¼	18 ¾	26	13
Meyer, Fred	NASDAQ	17 ⅞	9 ½	13 ⅜	10
Mobil	NYSE	54	32	44 ⅛	11
Modine	NASDAQ	22 ¾	11 ¾	17 ⅛	10
Mr. Gasket	NASDAQ	7 ⅝	4 ⅜	4 ¾	18
PACCAR	NASDAQ	39	21 ¾	37	–
Prkr Hannfin	NYSE	49	24 ½	29 ¼	13
Pennzoil	NYSE	81 ¼	38 ½	71 ¼	94
Pep Boys	NYSE	18 ⅞	9 ½	11 ⅝	19
Quaker State	NYSE	27 ⅛	12 ⅞	19 ¾	35
Rite Aid	NYSE	46 ¼	28 ½	33 ½	14
Sears	NYSE	59 ½	29 ¾	35 ⅝	9
Snap On	NYSE	46 ½	24 ¼	34	14
Stan Mtr Prod	NYSE	21	11 ⅛	13	15
Steego	NYSE	6	2 ½	5	–
Sun Co	NYSE	65 ½	34	56 ⅝	80
Superior Ind	AMX	17 ¾	8 ⅛	17	10
TBC Corp.	NASDAQ	15 ¼	3 ¾	13 ⅝	11
TRW	NYSE	70	37	43 ⅛	10
Tenneco	NYSE	62 ½	36 ⅛	45 ⅞	–
Texaco	NYSE	52 ½	26 ⅞	46	13
Triad Systems	NASDAQ	14 ¾	7 ½	12 ⅜	13
Walbro	NASDAQ	35	16 ¾	32 ¼	20
Wal Mart	NYSE	42 ⅞	20	30 ⅞	26
Wickes	NYSE	21 ½	7 ¼	8 ⅞	9
Witco	NYSE	42	26 ⅝	36	10

(Circle 12 on Product Information Card) →

product catalogs.

And, Canadian Tire sees a continuation of the light truck growth trends. "After all," Smitko said, "added truck life will continue to increase a demand for replacement parts." ■

Mergers: Fewer Clients, Stronger Contracts

The impact of mergers and acquisitions on the aftermarket is fewer clients, bigger budgets and the "importance of contracts," according to Doug Maehl.

And Maehl ought to know. He is vice president of marketing at Northern Automotive, Phoenix, the largest aftermarket chain of owned stores, a 826-store chain created through mergers and acquisitions.

Maehl was one of three speakers at an APAA Show Seminar on mergers and acquisitions. The panel, consisting of Maehl, David Weiss, a rep with Marc Alan Associates, River View, NJ, and Joe Hrudka, CEO and president of Mr. Gasket Co., Cleveland, an amalgamation of some 20 performance companies presented about 150 attendees with the pros and cons of the subject. Dick Weinberg, publisher of *Aftermarket Business*, Cleveland, moderated the panel.

Stronger Contracts

Maehl said the sheer size of Northern meant that the chain could not afford continuous supply source changes and thus it seeks long term commitments from its suppliers.

Maehl said that to get a long-term commitment, Northern considers suppliers with money to invest as Northern continues to grow; distribution that can service Northern stores across the country; and product guarantee and training.

"To sum up," he said, "The number of mergers and acquisitions will require changes by manufacturers and reps to service national chains. Simple, isn't it?"

Weiss followed with some negative thoughts on the wave of acquisitions from a rep's point of view.

"I've never been involved in a merger that resulted in more sales," Weiss said. "It's never one plus one equals three, as everyone expects. It's always one plus one equals maybe one and a half after lots of grief."

He noted the rep's duty was to fight for the smaller chains in his territory. He predicted that if mergers and acquisitions continue, the APAA Show in 1992 might be, "Doug and Joe (Hrudka, the third speaker) emerging from a phone booth."

Hrudka concluded with more positive thoughts from the supplier's point of view.

A Good Way To Run A Company

Hrudka, an Indianapolis Hot Rod Champion in 1961-62, joked that when he was racing, he asked Hurst Shifters for some parts. "They turned me down in 1963. Now I own the company." Hrudka's most recent acquisition is Thrush Mufflers.

"You can't run companies by the book," Hrudka said. "When W.R. Grace ran Mr. Gasket, it wasn't very successful. We used to bet they couldn't find the gas tank on a car." Hrudka said the reason he has succeeded was that he could develop products for performance people because he had been a performance person.

Judging from responses by Maehl and Hrudka to questions from the audience, the rep may be in for hard times. Maehl said Northern was not ready to pay for reps servicing stores. He suggested that service was a matter for the rep and supplier to agree on. Hrudka added that inside factory salesmen were the key; he sees a lot less use of reps in the future.

Responding to another question, Weiss added that reps must keep small companies alive or, like Wal-Mart has done in some towns, the aftermarket will become a retail desert for them. ■

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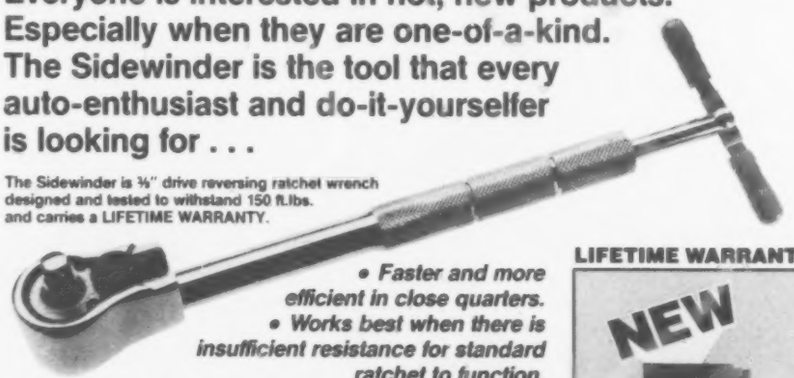

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SPANISH AMERICANS

In a study of 24 heavily Spanish American markets, markets containing 79% of all Spanish Americans, R. L. Polk & Co., Detroit, found that Spanish Americans bought 225,798 new cars and 111,589 new trucks. Polk estimates total vehicle sales to Spanish Americans of 427,072. In our chart, we've noted the vehicles with the highest percentage of Spanish American buyers in the 24 markets (limited to vehicles selling more than 10,000 units).

Vehicles	% Of Spanish American Buyers
Nissan Pick-Up	15.7
Toyota Pick-Up	13.9
Hyundai Excel	13.7
Mazda Pick-Up	13.0
Nissan Sentra	12.7
Isuzu Pick-Up	12.5
Toyota Van	12.5
Chevrolet Spectrum	12.2
Dodge Compact P/U	11.8
Chevrolet Compact P/U	11.5

Source: R. L. Polk & Co.

Predicting what the car of the future will be is hard, but it's clear that DIYers will have to learn to think maintenance, not repair.

By **John Wirebach,**
Senior News & Features Editor

Keeping up with the car of the future is going to be a major challenge for the aftermarket. That's about the simplest statement we can make about the subject. It's going to require a commitment to training at all levels. And a constant effort to keep the DIYer aware that he can work on his car, although the nature of that work may change.

Just for a simple example, take the anti-lock braking systems (ABS) coming onto the market. Although there's some dispute about how soon and how many cars will be equipped with ABS, the resulting increased safety might easily make them federally required.

The ABS concept is simple: each wheel contains a sensor that reports how fast the wheel is turning to a central computer. The computer anticipates skids by determining when brake pressure will provoke a lock-up. It momentarily releases pressure on only that wheel and then administers staccato pressure, much as a professional driver would pump the brakes, but faster. ABS provides a shorter braking interval, but more importantly, allows the driver to maneuver while braking.

There's no question that the ABS is much safer than standard hydraulic brakes, but there is concern about the price. ABS will add about $1,000 to the price of a car, so the ABS will first appear on luxury models. However, as the cost comes down, experts see ABS in general use by the mid-1990s, except for the most inexpensive economy models.

DIYers account for about a third of brake pads/shoe replacement today. But that proportion may seriously decline when faced with ABS. The word "computer" scares many DIYers. However, except for sensors and the central computer, there's virtually no change in brake work with ABS. DIYers can still work on brakes. But as the training manager of one supplier put it, "The aftermarket is going to need an education process to show the ABS can be fixed by anyone. The basic fundamental repairs will be there for a while yet."

The key for the aftermarket: educating DIYers to the fact that they can still do the job. And, as computerization and electronic controls dominate more systems on cars, keeping up with new technologies will be critical for aftermarket suppliers and distributors.

Factors Of Change

However, talking about the car of the

CAR OF THE FUTURE

I: GLOBALIZATION AND THE CAR OF THE FUTURE

Between joint ventures by domestic and import OEs and the construction of American plants by Japanese companies, the car of the future will truly be a global car. Here's a look at what U.S. companies are doing and considering.

Ford

Owns 49% of a joint venture in Brazil with VW to make trucks.

Owns 25% of Mazda, which makes the Ford Probe in Flat Rock, MI.

Owns 10% of Kia Motors (Korea).

Assembles Mercury Tracer in Hermosillo, Mexico.

Considering joint venture with Nissan.

Total 1987 Imports: 41,081.

General Motors

Owns 50% of Daewoo Motors (Korea), which makes Pontiac LeMans.

Owns 41.6% of Isuzu, which makes Chevrolet Spectrum in Japan.

Owns 5.3% of Suzuki, which makes Chevrolet Sprint in Japan. The two companies are building a Canadian plant to make light trucks.

Has a 50/50 joint venture with Toyota in Fremont, CA. United Motor Manufacturing. Makes Chevrolet Nova (142,934 in 1987) and Toyota Corolla.

Total 1987 Imports: 172,775.

Chrysler

Owns 24% of Mitsubishi, which makes various cars and trucks for Plymouth and Dodge models. The two companies are building a plant in Bloomington/Normal, IL.

Owns 15.6% of Maserati which will make Chrysler sports car.

Total 1987 Imports: 134,328.

Source: Automotive Marketing from various reports and studies

future today is much harder than it once was. As one technical director said, "You might be able to predict what's going to happen three years out. Beyond that, it's anybody's guess. Everyday I see patents abandoned before they're even approved."

How much of this technology becomes part of the everyday car of the future depends on many factors. What seems logical and sensible in 1988 may be outmoded or unnecessary by 1995. So we might consider several factors that will influence the car of the future:

- Competition
- Globalization
- Government regulations
- The price of oil
- Demographics

The most important factor is increased competition among car makers and the resulting overcapacity. As recently as 1970, there were only half a dozen car makers selling large numbers of cars in the U.S. Today, there are 15-20 car makers selling cars with varying degrees of success. U.S. consumers can choose among some 200 models.

In addition, technology has enabled OE car makers to speed up the pace of bringing cars to market. Not so long ago, car makers planned new cars five to six years out. But that's a dead concept. Five years from drawing board to production is a

II: GLOBALIZATION AND THE CAR OF THE FUTURE

Between joint ventures by domestic and import OEs and the construction of American plants by Japanese companies, the car of the future will truly be a global car. Here's a look at what Japanese companies in the U.S. are doing and considering.

Japanese Companies Already In The U.S.

Company	1987 Production
Honda Marysville, OH	324,065
Nissan Smyrna, TN	102,718 trucks 117,334 cars
Toyota Fremont, CA	43,744
Mazda Flat Rock, MI	4,200

Japanese Companies Building In The U.S.

Company	Planned Plant Location
Toyota	Georgetown, KY.
Fuji/Isuzu	Lafayette, IN

Source: Automotive Marketing from various reports and studies

luxury that no car company can afford.

GM is a good example of why not. Starting with close to a 50% market share in the U.S. as the 1980s began, GM fell to about a 37% market share by 1988. One major factor in the decline was the much criticized look alike down-sized cars GM produced in the 1980s.

However, in fairness to GM, planning and design of these cars began when high fuel prices looked as if they would last indefinitely. At that time, down-sizing and limiting model change costs made sense. But the recession-bound economy of 1981 was not a good predictor of the new car market for the mid-to-late 1980s.

Today, OE planning cycles are down to two to three years due to computer-aided design, engineering, and manufacturing. The pay-off of computer technology and automation allows OEMs to react quickly to redesigns. In fact, GM's Cadillac division established a record by redesigning the sheet metal of its 1988 El Dorado and going into production in just 12 months.

Such quick reaction will be a key to survival for the OEMs and a good reason to hedge any bets on what the cars we'll see in the next 10-20 years will look like, or what technology they will use.

overcapacity Also A Factor

But no one has solved the problem of overcapacity. The Department of Commerce (DOC) predicts a flat new car market for the next five years at about 10.5-11 million cars per year, assuming there's no major economic slump.

The DOC also estimates that Japanese car makers will control as much as 45% of the American market by 1995. In addition to the gains from domestic car makers, the rise in Japanese sales will make European car makers strictly niche marketers. The DOC sees a small gain for Korean cars.

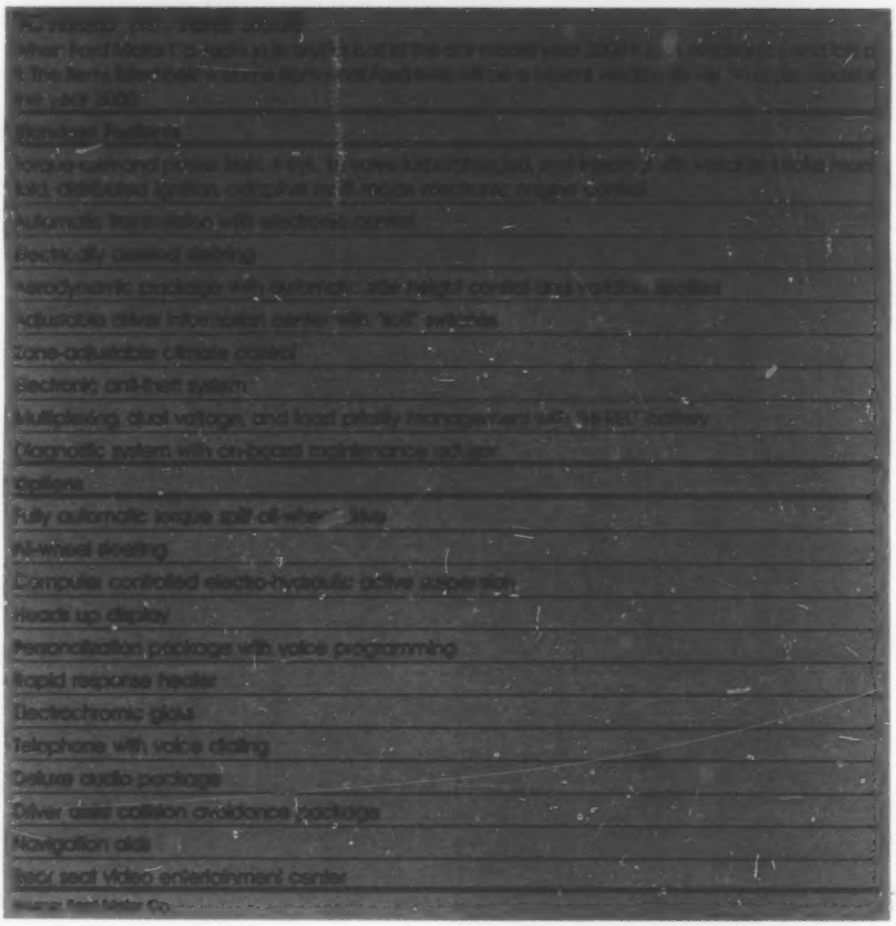
North American overcapacity is estimated to be about four million vehicles a year now. New Japanese transplant facilities will add about 2.5 million more units of overcapacity. Clearly, some sort of shake-out among OE companies is coming, but predicting who's going to survive is tough. For example, who would have predicted the success of Hyundai five years ago?

A Global Industry

Predicting who the survivors is an interesting game. But no matter who survives, the automotive industry is now a global industry. Not only is competition stiffer among companies but technology from overseas impacts the U.S.

For example, while GM touts its 16-valve, Quad-4 engine, Honda and Toyota have been selling 16 valve engines for some time. Other new technologies such as the ABS and four-wheel steering are also imports to the U.S. The University of Michigan's *Delphi IV Forecast and Analysis of the U.S. Automotive Industry Through 1995* of future automotive technology suggests that as much as a third of all research and development will be offshore by 1995, while imported products

CAR OF THE FUTURE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Aerodynamic package with automatic ride height control and variable shutters
Adjustable driver information center with "soft" switches
Zone-adjustable climate control
Electronic anti-theft system
Diagnostic system with on-board maintenance aid test
Options
Fully automatic torque split all-wheel drive
All-wheel steering
Computer controlled electro-hydraulic active suspension
Heads up display
Personalization package with voice programming
Rapid response heater
Electrochromic glass
Telephone with voice dialing
Deluxe audio package
Driver assist collision avoidance package
Navigation aids
Rear seat video entertainment center

will make up at least 25% and perhaps as much as 65% of U.S. components.

One reason for this is the joint-venture relationships between American and foreign car companies. Ford has lined up with Mazda, GM with Toyota, Isuzu and Subaru, and Chrysler with Mitsubishi. How the joint venture schemes will change the car of the future is not yet clear. Right now, the domestic OEs simply see the Japanese companies as suppliers of small cars to be sold under American nameplates. But this could change. Likewise, the impact of so much foreign technology and components on the American aftermarket remains to be seen.

Government Influence

Government regulations could change the competitive situation. While strict tariffs or trade protection is not likely, the possibility is there.

However, a more important area of government intervention lies in safety and emissions legislation which is a real possibility. The increased safety of an ABS might hasten its use by car makers, while increasing cries for better air quality

Forecasts by the Department of Commerce see a rather flat market for new car sales with increasing overseas competition through 1991

Vehicle Type	1988 (Auto) (Truck) 000) 000)	1989 (Auto) (Truck) 000) 000)	1990 (Auto) (Truck) 000) 000)	1991 (Auto) (Truck) 000) 000)
Traditional Domestic	6,370	6,130	5,990	6,110
Domestic Captive Imports	320	335	380	420
Japanese Imports	1,860	1,823	1,790	1,765
Japanese Made In U.S.	890	1,260	1,545	1,775
European Imports	490	485	450	450
Korean Imports	380	460	545	580

might easily speed the use of electronic engine controls.

Indeed, air quality groups in Southern California recently submitted a plan to the Environmental Protection Agency (EPA) that would require converting at least 40% of the cars in Southern California to clean fuels such as methanol or electricity by 1998 and all cars by 2008.

The effect of such a law on the car of the future would be staggering.

The Price Of Oil

Then there is always the possibility of another gas shortage. Fuel economy has fallen in importance as a major selling item for new cars. Gas has been reasonably priced (or at least perceived as reasonable by consumers) for the last three years. In the early 1980s, the price of a barrel of oil was close to $30; today, it's about $18. Right now, experts say the price of fuel will probably rise to about $1.75 a gallon by the late 1990s. In 1979, by contrast, the same experts pegged the price of fuel in the 1980s to over $2 per gallon and to almost $4 by 2000.

But there is always the chance that lines at gas stations will return. American imports of oil are well over the levels of the early 1970s, while American exploration for oil is almost nonexistent. Thus, any short-fall in Mideast shipments could spell disaster for the U.S.

If this should happen, fuel economy will again be important. Although American car makers are slightly better prepared today then they were in the late 1970s, the impact could be severe. On the other hand, Japanese car makers, which profited from the first gas shortages, have been moving into the higher-priced performance and large car market and they, too, could be hurt.

However, more important than the competitive aspects, many technological advances could be postponed or neglected should the car makers return to a federally mandated and consumer driven race for fuel economy.

Demographics

Finally, there are the demographics of the American market. Lower population growth, especially among higher income groups, means fewer young people buying cars. In addition, some 87% of American households already own at least one vehicle. The growth in the number of working women is leveling off which means fewer new working women coming into the new car purchase market, and perhaps, fewer second car purchases.

More importantly, there has been a decline in real disposable income. There's been lots of talk in the last few years about the real possibility that today's young people will not live as well as their parents. The percentage of households owning their own homes has dropped about 2% in the past five years to about 72%. And, those who do buy homes are burdened with onerous mortgages. Couple these factors to the possibility of rising interest rates, and the chances for a large increase in new car sales look dim.

The increasing costs of a new car has also played a large role in slow sales. Right now, it's impossible to see a car ad

without the ad mentioning some kind of give-back, rebate, or special low interest arrangement. No one, including import car makers who several years ago used dealer surcharges to increase profits, is selling cars on anything but price. No one is selling cars on technology.

For example, along with ABS, computerized suspension and ride control is a potential goal. The system works on the same principle as the ABS and it can prevent spin by using the ABS to apply braking or the engine control to reduce fuel. The benefits? Maximum traction, better control on wet roads, safety on turns. However, the cost is close to $2,000 (in addition to the ABS cost) a car and it's questionable that large numbers of people will voluntarily pay that much for safety. As a result, engineers see active suspensions reaching only 10-20% of the market by the mid-1990s.

So it's entirely possible that the automotive market may become two distinct markets: one of economy cars with half a dozen large OE companies competing on the basis of lowering production costs; and a second market of expensive, technologically advanced cars, consisting of OE niche marketers.

For aftermarket suppliers, this may be a boom, as OEMs depend on outside suppliers for more research and development. In the highly competitive market of the 1990s, car makers are less likely to expend large sums on research to develop new technology. Indeed, rather than devising and refining technology, it would seem that car makers, faced with over capacity and competition, will be forced to use their profits to keep their plants at a cutting edge so as to reduce their costs.

For distribution, the only sure-fire bet is that service, maintenance, and repairs will change. The DIYer will have to adapt if he is going to remain a viable customer for the retail aftermarket.

The GM Quad-4

Let's take another example. GM is touting its Quad-4 as its engine of tomorrow. If not the Quad-4, something very much like it. It has 16 valves, fuel injection, direct ignition, and computerized control. Starting with Oldsmobile and Buick models, as many as a quarter of GM cars will use the Quad-4 by 1990.

Probably the most striking thing is what's missing on the Quad-4. Computerized engine control is so effective it eliminates the EGR system, mass airflow meter, cold start injectors, distributor, spark plug wires, and a secondary air injection system. The ignition system is nonadjustable, with spark control totally regulated by the electronic control module.

However, although the spark plugs are hidden under an aluminum plate, just four bolts loosen the plate for easy access. The oil filter and starter motor are in plain view at the bottom of the engine. The fuel pump is in the gas tank.

A GM employee intimately acquainted with aftermarket aspects of the Quad-4 said there's not a lot a DIYer can do with the Quad-4. "To work on the engine, you must see a technician," he said. "It's not the desire of the manufacturer to eliminate DIY work, but manufacturers are pursuing driveability, reliability, and durability. We want a long-term car that will go seven or eight years without major repairs. To do that, you have to make the engine better. People are not going to pay high prices for cars unless they're better cars," he said.

"Our big challenge," he continued, "is to teach consumers and installers that the tune-up is dead. Maintenance is the key word now. Change the oil, change the filter. The car will not deteriorate as long as you keep up good maintenance habits. I believe that DIYers will be able to do less and less engine repairs. It's harder to do without expensive equipment. But on the other hand, there's less that's needed. Driveability problems will have to go to GM technicians. Maintenance jobs can still be done by the DIYer."

At The Installer Level

At the installer level, however, the GM employee believes gas stations and local garages can compete with car dealers and repair the Quad-4 by using the latest hand-held test equipment. However, he warned, "The tolerances are critical. It's important to keep technicians from being parts replacers. You have to know exactly what the problem is. Exact replacement is critical. You can't use cheap lines. It behooves a WD to align himself with an OE supplier for training and parts."

One ignition manufacturer we spoke with at the APAA Show disagreed. An executive with Wells Mfg. Corp., Fond Du Lac, WI, said the DIYer was not out of business. "For any component that fails, the DIYer can easily find the problem. Diagnosing a bad component, fuel, injection, wiring, whatever, will be easy as soon as test equipment becomes more affordable, say in the $200 range," he said.

"The old system was not so simple to repair. But we took it for granted and learned to work on it. The same thing will happen. The DIYer only has to learn to work on one car. He can get a dedicated manual, a jobber with good training, and he's back in business. And in the long term, think about the kid who's grown up with the computer and thinks of it as just another tool. You have a computer problem and he's not going to think twice about fixing it. The automotive use of computers is pretty simple. It's a basic program. The controls are simple."

The executive also thinks the local gas station can do the job. "There's no reason a gas station can't do the same job a dealer can. Sure, there's new tools needed. But there's always an investment. The largest investment is going to be in education. You're going to have to ally yourself with a supplier with training available. If the supplier's not willing to train, you probably have the wrong supplier."

Eliminating Repairs

Although suppliers differ on how much and with what difficulty DIYers can work on the new technologies, the car makers would like to eliminate repairs forever. There's already been progress toward the maintenance-free car: batteries no longer need service, electronic ignitions have eliminated the tune-up, tires seal their own punctures, platinum spark plugs go 60,000 miles before replacement, and stainless steel exhaust systems have doubled the life of a standard exhaust system.

Computerized engine controls adjust the mixture of gas and air so that the engine stays efficient even as spark plugs wear out and air filters get dirty, and the quality of gas varies.

In addition, the underhood computer plugs into diagnostic equipment to report on the status of engine components. And, in the newest concepts, the underhood computer will even spell out what maintenance is needed to sustain the car's driveabilty.

For example, BMW now offers a diagnostic system that spells out in green, yellow, and red lights when the car needs an oil change. The computer not only calculates mileage, but the number of times the car is started and stopped, driven cold, and at what speeds. At service time, the green lights goes off and a yellow light appears. A red light signals past due service. BMW plans to extend the diagnostics to filters, brake pads, spark plugs, and other maintenance items. Other OE manufacturers plan similar systems.

For distributors and retailers, it means a market with continuing parts proliferation as new cars last longer and the high price of new cars keeps older cars on the road longer.

For example, although OE makers are trying to reduce the number of components in new engines, an ignition supplier noted there were close to 5,000 new part numbers added in 1988. Choosing just what parts to carry is going to be even more crucial to the retailer in the 1990s.

With computers, design engineering can produce concepts only dreamed of ten years ago. Some advances will be only gimmicks—the tail fins of the 1990s. But some will change the fundamentals of driving.

Likewise, some technology will be easily absorbed by the retail market while some will require a fundamental change in the way a retailer goes to market. Keeping aware of technology is critical. ■